Radio Technical Commission for Maritime Services
1800 N. Kent St., Suite 1060
Arlington, Virginia 22209-2109
www.rtcm.org *rmarkle@rtcm.org*

Telephone: +1-703-527-2000 *Telefax: +1-703-351-9932*

Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of	)	
	)	
GMDSS Second Further Notice of Proposed Rulemaking	)	WT Docket No. 00-48
	)	
	)	RM-9499
	)	
	)	PR Docket No. 92-257
	)	
	)	June 4, 2004
	)	

COMMENTS OF THE RADIO TECHNICAL COMMISSION FOR MARITIME SERVICES (RTCM)

The Radio Technical Commission for Maritime Services (RTCM) respectfully submits these Comments in response to the Request for comments published in the Federal Register on April 6, 2004 (69 FR 18007).

The RTCM is a non-profit organization whose objectives include studying and preparing reports on maritime telecommunications practices, needs and technologies with a view toward improving the efficiency and capabilities of maritime telecommunications services, suggesting ways to keep rules and regulations to the minimum essential for

effective maritime telecommunications and making recommendations on important issues involving maritime telecommunications.

RTCM submits comments on the following matters:

A. Digital Selective Calling Equipment
B. Inmarsat Ship Earth Stations
C. Reserve Power Requirements for Small Passenger Vessels.
D. Commercial Operators Licenses
E. Ship Security Alert System
F. Updated References to International Standards
G. 2002 Biennial Review

A. Digital Selective Calling Equipment

RTCM supports a requirement for Digital Selective Calling (DSC) equipment to meet ITU–R Recommendations M.493–11 and M.541–9, and additionally, in the case of Class D VHF equipment, IEC 62238. RTCM Paper 56–95/SC101–STD should be removed as the basis for future authorization of DSC radios. RTCM has not maintained the "SC101" standard in the anticipation of the adoption of ITU-R M.493-11, ITU-R M.541-9 and IEC 62238, which should become the basis for future equipment authorization in the United States. We recommend that new authorizations of installed SC101 radios not be granted beginning 90 days after the effective date of the regulations, and that manufacture, sale, installation of installed SC101 radios not be permitted in the United States beginning three years after the effective date of the regulations. Handheld portable radios will require a longer phase-in period. We recommend that new authorizations of handheld portable SC101 radios not be granted beginning four years after the effective date of the regulations, and that manufacture and sale of handheld portable SC101 radios not be

permitted in the United States beginning seven years after the effective date of the regulations. Operation and use of SC101 radios should be permitted indefinitely.

The RTCM SC101 standard was developed to provide for a low-cost DSC radio, in order to provide basic DSC functionality for boaters at minimal economic impact. In order to arrive at a low-cost design, a number of performance compromises were made. Perhaps the most significant is the requirement for only one receiver. This means that an SC101 radio will not receive a distress call if the receiver is in use for another call. RTCM has observed that installed radios meeting ITU/IEC Class D standards (with two receivers) are now available in the United States for as little as $180. This is less that the price for SC101 radios when they were introduced. RTCM believes that the Class D standards are adequate and far superior to the compromised SC101 radios. Adoption of ITU–R Recommendations M.493-11 and M-541-9, and additionally, in the case of installed Class D VHF equipment, IEC 62238 as the bases for authorization, will greatly improve the safety performance of DSC radios for boaters. At the same time, the economic impact on boaters will be less that what was originally estimated at the time the RTCM SC101 standard was adopted. VHF portables voluntarily having a DSC capability should be allowed to comply with RTCM SC101 for an extended phase-out period. At the end of that period, such radios should then comply with ITU-R Recommendations M.493-11 and M-541-9, but need not comply with IEC 62238.

We recommend that 47 CFR 80.225(a) be revised as follows:

(a) Except as specified in (a)(1) to (a)(3) of this paragraph, DSC equipment voluntarily used or installed in coast or ship stations must meet the requirements of ITU-R Recommendation M.493–11, ‘‘Digital Selective-calling System for Use in the Maritime Mobile Service,’’ with Annexes 1 and 2, 2004, and ITU–R Recommendation M.541–9, ‘‘Operational Procedures for the Use of Digital Selective-Calling Equipment in the Maritime Mobile Service,’’ with Annexes, 2004. Additionally, VHF Class D radios voluntarily installed in coast or ship stations after [three years after the effective date of these rules] under ITU-R M.493-11, must meet IEC 62238 (2003-03). DSC equipment must not be used with the sensors referred to in §80.179(e)(2). DSC equipment used on compulsorily fitted ships must meet the requirements contained in subpart W of this part for GMDSS.

(1) With the exception of VHF handheld portable radios, DSC equipment authorizations will not be granted after [90 days after the effective date of these rules] unless the equipment meets the standards listed in paragraph (a) of this section. For VHF handheld portable radios, DSC equipment authorizations will not be granted after [four years after the effective date of these rules], unless the equipment meets the standards listed in paragraph (a) of this section.

(2) DSC equipment shall not be manufactured, sold, or imported to the United States after [three years after the effective date of these rules], or [seven years after the effective date of these rules] in the case of a VHF handheld portable radio, unless it meets the standards listed in paragraph (a) of this section.

(3) DSC equipment voluntarily used or installed in coast or ship stations which does not meet paragraph (a) of this section under the transitional provisions of paragraphs (a)(1) and (a)(2) of this section, shall meet RTCM Paper 56–95/SC101–STD.

B. Ship Earth Stations

RTCM supports the addition of the Inmarsat F77 ship earth station to the lists in 47 CFR 80.905(a)(3)(iii)(B) and (a)(4)(iii)(B). The F77 ship earth station meets GMDSS requirements and should be accepted. In addition, the following regulations should be revised to list current Inmarsat systems:

- 47 CFR 80.310 should list Inmarsat M and F77 in addition to A, B, and C.
- 47 CFR 80.1101 should be revised to include IEC 61097-13 (2003-05) as a standard applying to Inmarsat F77 systems.

RTCM also supports the inclusion of any mobile satellite system in the regulations which meets the IMO GMDSS requirements and any applicable IEC standards. It is not appropriate to include enhanced 911 emergency calling equipment unless it fully complies with the IMO GMDSS requirements.

C. Reserve Power Requirements for Small Passenger Vessels.

RTCM supports the NTSB recommendation to extend the reserve power requirement to small passenger vessel of 100 gross tons or less. We concur with NTSB's conclusion that the inability to contact rescue personnel through the VHF radiotelephone would

unnecessarily increase the risk to passengers and crew. It should be accomplished by removing the tonnage limitation in 47 CFR 80.917. This requirement can be met economically, and it would increase the probability that the vessel would be able to communicate with rescuers in the event that ship's power is lost in the event of a casualty.

In making this recommendation, RTCM considered alternative means to provide communications in the event of loss of ship's power, including the possibility of using handheld portable radios, such as the survival craft portable radio described in 47 CFR 80.834. Such a waterproof portable radio could be used even if the vessel had to be abandoned. But, because portable radios are limited in their power capacity and duration in order to keep battery weight low, this is not a recommended alternative. An installed reserve power supply as described in 47 CFR 80.917 would provide for extended communication capability, which could be extremely important in an emergency.

D. Commercial Operators Licenses

RTCM has no objection to a lifetime license term for GMDSS operators and maintainers, and for Marine Radio Operator Permits. Since there is currently no requirement to prove competency when the license is renewed, and since the Commission does not maintain a database of license holders with current contact information, there appears to be no reason to require periodic renewal of these licenses and permits at this time.

RTCM also supports a reasonable transition period for COLEMs to transition to a new question pool. We also support removing the requirement to use the most recent question pool from 47 CFR 13.215, and also removing the specification for the number of questions for each examination element from 47 CFR 13.203(a). This procedure will provide the Commission with more flexibility by allowing these specifications to be made by public notice.

E. Ship Security Alert System

RTCM has just completed a standard for Ship Security Alert Systems (SSAS) Using the Cospas-Sarsat system (RTCM Paper 110-2004/SC110-STD). RTCM was requested to develop this standard by the Sarsat Office of the National Oceanic and Atmospheric Administration. The standard was necessary because there are certain message content requirements for SSAS messages sent through the Cospas-Sarsat system, and because the configuration of the installed SSAS unit is different than the portable beacons used with other Cospas-Sarsat services. Therefore, RTCM recommends that RTCM Paper 110-2004/SC110-STD be incorporated by reference into the Commission's rules as the basis for authorization of Cospas-Sarsat SSAS units.

At this time, RTCM is not aware of any other standards that have been developed or which are needed for SSAS operating through services other than Cospas-Sarsat. RTCM established a Special Committee (RTCM Special Committee 122 (SC122) on Ship Security Alert Systems) to consider the issue of appropriate standards for SSAS operating through other systems. SC122 held its first meeting on May 19, 2004. The consensus of

SC122 was that SSAS was intended to be a messaging system that uses existing communications systems that already have type-approvals of their own. However, in the case of the Cospas-Sarsat implementation, a product was being developed specifically for SSAS, and this was the basis for development of the RTCM standard. SC122 agreed that none of the other known SSAS implementations would benefit from development of another standard for their SSAS products and services.

The following are RTCM's responses to the specific questions posed by the Commission in the Second Further Notice of Proposed Rulemaking:

What requirements should be imposed for SSAS equipment?

With the exception of the Cospas-Sarsat implementation, SSAS messages are sent through existing communication systems, and no additional requirements need to be imposed for them. However, Inmarsat D+ is suitable for transmission of SSAS alerts, but is not currently cited in Part 80. The Commission's regulations need to provide for Inmarsat D+ SSAS.

What requirements should be imposed for SSAS certification?

Authorization of Cospas-Sarsat SSAS beacons should be based on the RTCM Standard for Ship Security Alert Systems Using the Cospas-Sarsat System, RTCM Paper 110-2004/SC110-STD, June 4, 2004.

What requirements should be imposed for SSAS testing?

With the exception of the Cospas-Sarsat implementation, SSAS messages are sent through existing communication systems, and no additional testing requirements need to be imposed for them. The RTCM Standard for Ship Security Alert Systems Using the

Cospas-Sarsat System, RTCM Paper 110-2004/SC110-STD, June 4, 2004, addresses testing of Cospas-Sarsat SSAS beacons.

What requirements should be imposed for SSAS registration?

In the case of Cospas-Sarsat SSAS beacons, registration should be accomplished by the same entities that register other Cospas-Sarsat beacons. In the U.S., this is the Sarsat Office in the National Oceanic and Atmospheric Administration. Separate registration of other known SSAS implementations should not be necessary.

What requirements should be imposed for SSAS technical performance?

With the exception of the Cospas-Sarsat implementation, SSAS messages are sent through existing transmitters, and no additional performance requirements need to be imposed for them. The RTCM Standard for Ship Security Alert Systems Using the Cospas-Sarsat System, RTCM Paper 110-2004/SC110-STD, June 4, 2004, addresses performance of Cospas-Sarsat SSAS beacons.

What requirements should be imposed for SSAS message content and format?

With the exception of the Cospas-Sarsat implementation, SSAS messages are sent through existing communication systems, and message content and format will be established by the service provider. The RTCM Standard for Ship Security Alert Systems Using the Cospas-Sarsat System, RTCM Paper 110-2004/SC110-STD, June 4, 2004, addresses message content and format for Cospas-Sarsat SSAS beacons.

What requirements should be imposed for routing of ship security alerts? What requirements are appropriate for communications service providers that route alerts from ship security equipment?

Routing of ship security alerts is addressed in Regulation XI-2/6.2.1 of the Safety of Life at Sea Convention (SOLAS). Alerts are to be sent to a competent authority designated by the Administration, and may also be sent to the company which owns or operates the ship. The U.S. Coast Guard has designated the Rescue Coordination Center in Alemeda, CA as the competent authority in the U.S. RTCM recommends that the Commission's rules simply indicate that ship security alerts from U.S. registered ships shall be sent to the competent authority designated by the Commandant of the United States Coast Guard. This would permit the Coast Guard to change the competent authority in the future, if necessary, without a revision of the Commission's regulations. The Commission's regulations should also permit the alert to be sent to the owner or operator of the ship.

F. Updated References to International Standards

With regard to updating Part 80 with respect to changes in current international standards, RTCM makes the following recommendations:

1 The definition for Digital Selective Calling in § 80.5 should read:

Digital selective calling (DSC). A synchronous system developed by the International Radio Consultative Committee (now the International Telecommunications Union (ITU)), used to establish contact with a station or group of stations automatically by means of radio. The operational and technical characteristics of this system are contained in ITU–R Recommendations M.493 and M-541.

2 The references to ITU-R M.541-8 throughout § 80.103 should be to ITU–R Recommendation M.541–9, ‘‘Operational Procedures for the Use of Digital Selective-Calling Equipment in the Maritime Mobile Service,’’ with Annexes, 2004.

3 The reference in paragraph 80.179(e)(1) to CCIR Recommendations 493 and 541 should be to ITU Recommendations ITU-R M.493 and M.541.

4 The reference in footnote 14 in the table under paragraph 80.207(d) to CCIR Recommendations 625 and 476 should be to ITU-R M.625 and M.476.

5 Section 80.273 on marine radar equipment should be completely revised. This section cites outdated RTCM Performance Standards and fitting schedules that have been superceded by IMO and IEC standards.

Current IMO and IEC standards must be referenced in Section 80.273. The current IMO resolutions require all compulsory vessels of 300 tons gross tonnage and above and High Speed Craft (HSC) to be fitted with radar. As of 1 January 2003, new radars were to comply with the new ITU appendix S3 of the radio regulations for spurious and out of band emission limits.

RTCM recommends discontinuing the practice of listing outdated standards in the regulations which may still apply to existing installations. The Federal Register maintains previous editions of the Code of Federal Regulations online, which now are

available for the past 10 years. In the event that a previous edition of the regulations must be found to identify an outdated standard, this can be readily done online.

RTCM recommends that Section 80.273 be revised to reflect the current standards for radar, as follows:

§ 80.273 Technical requirements for radar equipment.

(a) Radar installations on board ships that are required by the Safety Convention or the U.S. Coast Guard to be equipped with radar must comply with the documents identified in the following paragraphs of this section. These documents contain specifications, standards and general requirements applicable to shipboard radar equipment and shipboard radar installations. For purposes of this part the specifications, standards and general requirements stated in these documents are mandatory irrespective of discretionary language. The standards listed in this section are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of these standards can be inspected at the Federal Communications Commission, 445 12th Street, SW., Washington, DC (Reference Information Center) or at the Office of the Federal Register, 800 North Capitol Street, NW. Suite 700, Washington, DC. "IMO" documents can be purchased from the International Maritime Organization (IMO), Publications, 4 Albert Embankment, London SE1 7 SR, United Kingdom; telephone 011 44 71 735 7611, or from IMO distributors worldwide, as listed on the IMO Website, www.imo.org. "IEC" documents can be purchased from the International Electrotechnical Commission (IEC), 3 Rue de Varembe, CH–1211 Geneva 20, Switzerland, or from the American National

Standards Institute (ANSI), 11 West 42nd Street, New York, NY 10036, telephone (212) 642–4900 (www.nssn.org). "ITU" documents can be purchased from the International Telecommunication Union (ITU), General Secretariat—Sales Section, Place des Nations, CH–1211 Geneva 20, Switzerland (www.itu.int).

(b) Except as specified in paragraph (d) of this section, radar installed on or after [the effective date of these rules], on ships of 300 tons gross tonnage and upwards must comply with –

(1) IMO Resolution MSC.64(67) Annex 4 "Recommendation on performance standards for radar equipment";

(2) IEC 60936 part 1 (2000-08), "Shipborne Radar – Performance Requirements – Methods of testing and required results"; and

(3) All ITU spectrum requirements in appendix S3 of the radio regulations and its subsequent method of measurements specified by ITU SM 1177.

(c) For ships of 10,000 gross tons or more and any other ship that is required to be equipped with two radar systems, each of these systems must be capable of operating independently and must comply with the specifications, standards and general requirements established by paragraph (b) of this section. One of the systems must provide a display with an effective diameter of not less than 340 millimeters (13.4 inches), (16 inch cathode ray tube). The other system must provide a display with an effective diameter of not less than 250 millimeters (9.8 inches), (12 inch cathode ray tube).

(d) Radar installed on a ship after [the effective date of these rules], and certificated by the U.S. Coast Guard under the IMO Code for the Safety of High

Speed Craft (IMO Resolution MSC.36(63), May 20, 1994), must comply with –

(1) IMO Resolution MSC.64(67) Annex 4 "Recommendation on performance standards for radar equipment";

(2) IEC 60936 part 2 (1998-10), "Shipborne radar for high-speed craft (HSC) - Methods of testing and required test results"; and

(3) All ITU spectrum requirements in appendix S3 of the radio regulations and its subsequent method of measurements specified by ITU SM 1177.

(e) Radar installed on or after [the effective date of these rules] on ships of less than 150 tons gross tonnage must comply with IEC 62252 (2004), "Radar for craft not in compliance with IMO SOLAS Chapter V - Performance requirements, methods of test and required test results".

(f) Radar installed on or after [the effective date of these rules] on ships of 150 tons gross tonnage and upwards but less than 300 gross tons, and not certificated under the IMO Code for the Safety of High Speed Craft, must comply with either the requirements of paragraph (b) or (e) of this section.

(g) Radar installed before [the effective date of these rules] must meet and be maintained to comply with the Commission's regulations in effect for the equipment on the date of its installation.

6 The document referenced in paragraph 80.1101(b)(4) has been replaced by IEC 60092-101, "Electrical installations in ships - Part 101: Definitions and general requirements," August 2002.

7 The document referenced in paragraph 80.1101(b)(5) has been replaced by IEC 60533, “Electrical and electronic installations in ships - Electromagnetic compatibility,” November 1999.

8 The document referenced in paragraphs 80.1101(c)(2)(ii), (c)(3)(ii) and (c)(4)(ii) has been replaced by ITU Recommendation M.493-11, “Digital selective-calling system for use in the maritime mobile service,” 2004. Since ITU–R Recommendation M.541–9, ‘‘Operational Procedures for the Use of Digital Selective-Calling Equipment in the Maritime Mobile Service,’’ 2004, has now been incorporated by reference in Recommendation M.493-11, M.541-9 should be added as a new subparagraph (iii) in each of these three sections.

9 The correct reference document in paragraph 80.1101(c)(7), is IMO Resolution A.762(18), “Performance standards for survival craft two-way VHF radiotelephone apparatus,” November 4, 1993.

10 The correct reference in paragraph 80.1101(c)(11)(ii), is IEC 61097-3 (1994-06), “Global maritime distress and safety system (GMDSS) - Part 3: Digital selective calling (DSC) equipment - Operational and performance requirements, methods of testing and required testing results.”

11 The correct reference in paragraph 80.1101(c)(11)(iii), is IEC 61097-4 (1994-11), “Global maritime distress and safety system (GMDSS) - Part 4: INMARSAT-C ship

earth station and INMARSAT enhanced group call (EGC) equipment - Operational and performance requirements, methods of testing and required test results."

12 The correct reference in paragraph 80.1101(c)(11)(iv) is IEC 61097-6 (1995-02), "Global maritime distress and safety system (GMDSS) - Part 6: Narrowband direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX) - Operational and performance requirements, methods of testing and required test results."

13 The correct reference in paragraph 80.1101(c)(11)(v), is IEC 61097-7 (1996-10), "Global maritime distress and safety system (GMDSS) - Part 7: Shipborne VHF radiotelephone transmitter and receiver - Operational and performance requirements, methods of testing and required test results."

14 The correct reference in paragraph 80.1101(c)(11)(ix), is IEC 61097-12 (1996-12), "Global maritime distress and safety system (GMDSS) - Part 12: Survival craft portable two-way VHF radiotelephone apparatus - Operational and performance requirements, methods of testing and required test results."

15 With respect to paragraphs 80.1101(d)(3) and (d)(4), ANSI now sells standards through its NSSN operation (www.nssn.org), at Customer Service, American National Standards Institute, 25 West 43rd Street, New York, NY 10036.

16 The reference to CCIR Recommendation 493 in § 80.1113(b) should be to ITU-R Recommendation M.493–11, ‘‘Digital Selective-calling System for Use in the Maritime Mobile Service,’’ with Annexes 1 and 2, 2004, and ITU–R Recommendation M.541–9, ‘‘Operational Procedures for the Use of Digital Selective-Calling Equipment in the Maritime Mobile Service,’’ with Annexes, 2004.

G. 2002 Biennial Review

With regard to the filing by Globe Wireless on November 1, 2002, and other housekeeping changes suggested by the Commission, RTCM makes the following recommendations:

1 Delete 47 CFR 80.141(c)(1)-(2) as obsolete. RTCM supports the deletion of these paragraphs as an editorial correction. The Commission revised paragraph (c) of § 80.141 at 68 FR 46961 (August 7, 2003). In doing so, it brought the requirement for compulsory radiotelephone ships to provide public correspondence service on voyages of 24 hours or more, into § 80.141(c) from § 80.141(c)(2). Section 80.141(c)(1) applies to compulsory radiotelegraph ships. Paragraphs (c)(1) and (c)(2) of § 80.141 should have been deleted with the revision of paragraph (c), and should be deleted at this time.

2 Delete 47 CFR 80.203(b)(3). This paragraph requires programming of authorized channels on VHF transmitters to be carried out by licensed persons using specified means. RTCM recommends that this requirement be retained.

3 Revise the list of emission classes in 47 CFR 80.207. At least one manufacturer developing Class B AIS equipment has a need to transmit routine data messages to other ships. Since such messages could cause congestion over the AIS channels are therefore prohibited by international standards, means for transmitting such information over other channels are needed. RTCM therefore recommends that these emissions be aligned to permit the following:

a. Data operation over the two AIS frequencies 161.975 and 162.025 MHz.

b. Data operation over voice channels not used for safety or safety-related operations or otherwise excluded be permitted on a non-interference basis to voice communications, provided that i) carrier sense circuitry be employed to prevent data transmissions on a channel while being used for voice communications within one minute of a voice transmission, ii) transmission duration should not exceed 1 second, and iii) carrier sense circuitry monitor the channel every second.

4 Delete rules pertaining to Morse Code in 47 CFR 80.355 and 80.357. RTCM supports the deletion of the obsolete rules pertaining to Morse Code in 47 CFR 80.355 and 80.357.

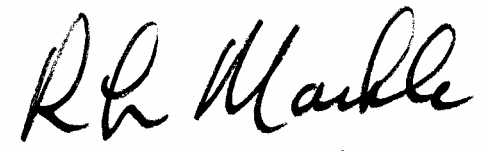
5 Delete note 5 to 47 CFR 80.207(d). RTCM has no objection to the FCC proposal.

6 List 1615 kHz as the low end of the 1605-27500 kHz band in 47 CFR 80.207(d) and 80.313. RTCM has no objection to the FCC proposal.

7 Remove the entry for 14.00-14.05 GHz in 47 CFR 80.207(d). RTCM has no objection to that proposal.

8 With regard to making the on-board frequencies listed in section 80.373(g) available for narrowband operations in light of narrowbanding those frequencies by ITU, RTCM concurs, so that US and international operations might be aligned.

For the Radio Technical Commission for Maritime Services



R. L. Markle
President